

AMENDMENT

In the Claims:

Please cancel claim 3 without prejudice or disclaimer.

Please amend claim 1 as follows.

1. (Currently Amended) An apparatus comprising:

a first substrate having a first opening therethrough;
a second substrate, attached to said first substrate, having a second opening
therethrough and aligned with the first opening in said first substrate; and
a first optically transparent material disposed in said first substrate hole;
a second optically transparent material disposed in said second substrate hole
wherein the first optically transparent material is optically aligned with the
second optically transparent material to form a waveguide, and
wherein said optically transparent material is cladding grown on the inside of the
substrate hole.
2. (Previously Presented) The apparatus of claim 1, wherein said transparent material is
a gas.
3. (Canceled).
4. (Previously Presented) The apparatus of claim 1, wherein said transparent material is
comprised of an outer cladding and a separate inner transparent material.
5. (Previously Presented) The apparatus of claim 1, wherein said transparent material is
an optical fiber.
6. (Previously Presented) The apparatus of claim 1, wherein said first substrate is made
of silicon.

7. (Previously Presented) The apparatus of claim 1, wherein said transparent material and said first substrate are made of a same material.

8. (Previously Presented) The apparatus of claim 1 further comprising a source of electromagnetic radiation attached to said first substrate.

9. (Previously Presented) An apparatus comprising:
a multi-level optical waveguide comprising
a first substrate having a first opening therethrough;
a second substrate, attached to said first substrate, having a second opening therethrough and aligned with the first opening in said first substrate;
a first optically transparent material disposed in said first substrate hole;
a second optically transparent material disposed in said second substrate hole; and
a detector of electromagnetic radiation disposed at an end of said second opening.

10. (Previously Presented) The apparatus of claim 1 further comprising a conductive layer on said second substrate.

Claims 11-30. (Canceled)